UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/444,027	11/19/1999	DAVID H. LYNCH	2836-C	8096

7590 03/26/2002

James E. Klaniecki
Immunex Corporation Law Department
51 University Street
Seattle, WA 98101

EXAMINER	
GAMBEL, PHILLIP	
ART UNIT	PAPER NUMBER
1644	11

DATE MAILED: 03/26/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/444017	Applicant(s) LYNCH
	Examiner GAMBEL	Art Unit 1644

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☑ Responsive to communication(s) filed on _____.

2a)☑ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☑ Claim(s) 1-21 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration. 3-5, 8-13, 41

5)☐ Claim(s) _____ is/are allowed.

6)☑ Claim(s) _____ is/are rejected. 1, 2, 6, 7, 14-20

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a)☐ The translation of the foreign language provisional application has been received.

15)☑ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
4)☐ Interview Summary (PTO-413) Paper No(s). _____.
5)☐ Notice of Informal Patent Application (PTO-152)
6)☐ Other:

DETAILED ACTION

1. Applicant's amendment, filed 12/31/01 (Paper No. 9), has been entered.
Claims 15-21 have been added.

Claims 1, 2, 6, 7 and 14 and newly added claims 15-20 read on the elected invention, which reads on Group I and the species interferon alpha, GM-CSF and cancer.

Claims 3-5, 8-13 and newly added claim 21 are withdrawn from further consideration by the examiner, 37 C.F.R. § 1.142(b) as being drawn to a nonelected inventions/species.

2. The text of those sections of Title 35 USC not included in this Action can be found in a prior Action.
This Office Action will be in response to applicant's arguments, filed 12/31/01 (Paper No. 9).
The rejections of record can be found in the previous Office Action (Paper No. 7).

3. Applicant's statements on priority of the instant claims in Paper No. 9, filed 12/31/01, is acknowledged.

As applicant acknowledges, the IFN alpha has a priority date of the instant application USSN 09/440,027, i.e. 11/19/99.

4. Claims 1, 2, 6, 7 and 14 and newly added claims 15-20 are rejected under 35 U.S.C. § 103(a) as being unpatentable over
Lyman et al. (U.S. patent No. 5,843,423; 1449) AND/OR
Brasel et al. (WO 97/12633) AND/OR
Fichelson (Eur. Cytokine Netw 9: 7-22, 1998)
in view of
Kishida et al. (U.S. Patent No. 5,846,928) AND/OR
Cummins et al. (U.S. Patent No. 5,017,371) AND/OR
Srivastava et al. (U.S. Patent No. 6,017,544) essentially for the reasons of record set forth in Paper No. 7.

Applicant's arguments, filed 12/31/01 (Paper No. 9), have been fully considered but are not found convincing essentially for the reasons of record.

In reviewing the teachings of the prior art, applicant submit in conjunction with Stratoflex, Inc. v. Aeroquip Corp., In re Mills and In re Gordon that the cited prior art does not provide the requisite suggestion, teaching or motivation to modify or combine the cited references.

Applicant argues that the present invention a significant advancement in the art that extends beyond the teachings of Lyman/Brasel/Fichelson. Applicant asserts that the Example 4-6 demonstrate surprising results in augmenting immune responses, especially evident in treating cancer.

Applicant asserts that Kishida must be viewed as a whole and does not teach administering IFN alpha to the patient but rather focuses on ex vivo treatment. Applicant argues that there is no teaching for combining disparate therapies.

Applicant asserts that the intended purpose of the teachings of Cummins is directed towards alleviating the side effects of chemo and radiation therapy. In contrast, applicant asserts that the instant methods are drawn to augmenting immune responses.

In contrast to applicant's assertion that Srivastava is not prior art, applicant is reminded that Srivastava et al. (U.S. Patent No. 6,017,544) is prior art based upon its 102(e) date.

In contrast to applicant's assertions, the following of record is reiterated for applicant's convenience.

The instant claims are drawn to methods of augmenting immune responses in patients, particularly cancer patients by administering FLT3 ligand (FLT3-L), interferon alpha and GM-CSF.

Lyman et al. teach methods of treating cancer patients by administering FLT3-L in combination with other cytokines, including GM-CSF including treating intestinal damage resulting from irradiation and chemotherapy and stimulating immune responses as well as hemopoietic cells to improve the quality of life of a patient (see entire document; Background of the Invention; Summary of the Invention, including column 3, paragraph 4; column 7; and Claims).

Brasel et al. teach methods of augmenting anti-tumor immune responses by administering FLT3-L in addition to other cytokines, including GM-CSF (see entire document, including Summary of the Invention; page, 4, paragraphs 5-6; page 5, paragraph 3; page 7, paragraph 1; pages 9-1; page 12; Example 3 and Claims).

Fichelson et al. teach the in vivo anti-tumor activities and hemopoietic reconstitution capabilities of FLT3-L, including the use of colony stimulating factors to stimulate progenitor cells in the peripheral blood (see entire document, particularly pages 15-17, In vivo experimental data involving FL and Conclusions and Perspectives).

Lyman et al., Brasel et al. and Fichelson differ from the claimed methods by not disclosing the use of interferon alpha in addition to FLT3-L and GM-CSF to treat cancer patients.
Fichelson et al. also differs from the claimed methods by not disclosing GM-CSF as the colony stimulating factor per se.

Kishida et al. teach methods of treating patients with cancer with interferon alpha (see entire document, including Background of the Invention, Summary of the Invention, Detailed Description and Claims).

Cummins et al. teach methods of reducing side effects of administering cancer therapy utilizing chemotherapeutic agents and radiation therapy with interferon alpha (see entire document, including Background and Summary of the Invention; Detailed Description; Claims) .

Srivastava et al. teach methods of augmenting cancer vaccines with cytokines including interferon alpha and GM-CSF (see entire document; including Summary of the Invention, including column 4, paragraph 6; Detailed Description, including column 12, paragraph 3; Claims.).

Given the teachings of Lyman et al., Brasel et al. and Fichelson et al. to administer FLT3-L in combination with other cytokines including GM-CSF to treat cancer patients by achieving various endpoints in such treatment; it would have been obvious to combine such treatment with interferon alpha, which also provided various endpoints in the treatment of cancer patients, as taught by Kishida, Cummins et al. and Srivastava et al.

One of ordinary skill in the art at the time the invention was made would have been motivated to select a combination of cytokines, including FLT3-L, GM-CSF and interferon alpha to treat human cancer; given the properties of said cytokines to inhibit cancer, to augment immune responses including augmenting immune responses to cancer antigens and to stimulate hemopoietic cells to alleviate the effects of chemotherapy and radiation therapy in cancer patients.

From the teachings of the references, it was apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention. Therefore, the invention as a whole was prima facie obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

In response to applicant's arguments that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See In re Fine 5 USPQ2d 1596 (Fed. Cir 1988) and In re Jones 21 USPQ2d 1941 (Fed. Cir. 1992). In this case the prior art clearly provide teachings that it was known at the time the invention was made that cytokines, including FLT3-L, GM-CSF and interferon alpha, to cancer patients provided multiple benefits to patients, thereby addressing the same cancer patients with the same cytokines. One of ordinary skill in the art at the time the invention was made to combine the references to solve a well known problem in the art. The strongest rationale for combining reference is a recognition, expressly or implicitly in the prior art or drawn from a convincing line of reasoning based on established scientific principles or legal precedent that some advantage or expected beneficial result would have been produced by their combination In re Sernaker 17 USPQ 1, 5-6 (Fed. Cir. 1983) see MPEP 2144

The motivation to combine can arise from the expectation that the prior art elements will perform their expected functions to achieve their expected results when combine for their common known purpose. Section MPEP 2144.07.

In contrast to applicant's assertions, the prior art does teach combining cytokines, including combinations comprising FLT3-L, GM-CSF and interferon alpha to treat human cancer

Again, Lyman et al. teach methods of treating cancer patients by administering FLT3-L in combination with other cytokines, including GM-CSF including treating intestinal damage resulting from irradiation and chemotherapy and stimulating immune responses as well as hemopoietic cells to improve the quality of life of a patient (see entire document; Background of the Invention; Summary of the Invention, including column 3, paragraph 4; column 7; and Claims).

The prior art teach that administering the cytokines in combination with effective amounts of other active materials would vary according the needs of the patient and the intended use. Therefore, the newly added claims of inhibiting tumor growth and incidence as well as sequential or concurrent administration would have been readily apparent to the ordinary artisan at the time the invention was made in treating cancer with multiple cytokines.

Applicant's assertions of unexpected results based upon the instant Examples do not appear to rely upon the elected invention comprising FLT3-L, GM-CSF and interferon alpha to treat human cancer.

One cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. In re Keller , 642 F.2d 413, 208 USPQ 871 (CCPA 1981); In re Merck & Co., Inc. , 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). See MPEP 2145.

5. No claim is allowed.

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phillip Gambel whose telephone number is (703) 308-3997. The examiner can normally be reached Monday through Thursday from 7:30 am to 6:00 pm. A message may be left on the examiner's voice mail service. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Chan can be reached on (703) 308-3973. Any inquiry of a general nature or relating to the status of this application should be directed to the Technology Center 1600 receptionist whose telephone number is (703) 308-0196.

Papers related to this application may be submitted to Technology Center 1600 by facsimile transmission. Papers should be faxed to Technology Center 1600 via the PTO Fax Center located in Crystal Mall 1. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The CM1 Fax Center telephone number is (703) 305-3014.

PhillipGambel

Phillip Gambel, PhD.
Primary Examiner
Technology Center 1600
March 25, 2002